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CA INDEXING COPYRIGHT (C) 2010 AMERICAN CHEMICAL SOCIETY (ACS)

=> e alocilja evangelyn/au

E1 5 ALOCILJA E/AU

E2 17 ALOCILJA E C/AU

E3 13 --> ALOCILJA EVANGELYN/AU

E4 124 ALOCILJA EVANGELYN C/AU

E5 1 ALOCILJA EVELYN C/AU

E6 1 ALOCILLA A/AU

E7 1 ALOCK AJ/AU

E8 1 ALOCK C B/AU

E9 1 ALOCIL COMMUNITY OCULAR ALLERGY TRIAL STUDY GROUP/AU

E10 1 ALOCIL T M COMMUNITY ALLERGY TRIAL STUDY GROUP/AU

E11 2 ALODAIB ALI/AU

E12 2 ALODAINI AMAL A/AU

=> s e2-e4

L1 154 ("ALOCILJA E C"/AU OR "ALOCILJA EVANGELYN"/AU OR "ALOCILJA EVANGELYN C"/AU)

=> s l1 and nanoparticle

L2 38 L1 AND NANOPARTICLE

=> dup rem l2

PROCESSING COMPLETED FOR L2

L3 19 DUP REM L2 (19 DUPLICATES REMOVED)

=> d l3 1-19 ti

L3 ANSWER 1 OF 19 CAPLUS COPYRIGHT 2010 ACS on STN  
TI Characterization of polyaniline-coated magnetic nanoparticles for application in a disposable membrane strip biosensor

L3 ANSWER 2 OF 19 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 1  
TI Biomolecules detection using a silver-enhanced gold nanoparticle-based biochip

L3 ANSWER 3 OF 19 USPATFULL on STN  
TI Porous silicon-polymer composites for biosensor applications

L3 ANSWER 4 OF 19 USPATFULL on STN  
TI Synthesis of conducto-magnetic polymers as nano-transducers in biosensor design

L3 ANSWER 5 OF 19 USPATFULL on STN  
TI Biologically enhanced electrically-active magnetic nanoparticles for concentration, separation, and detection applications

L3 ANSWER 6 OF 19 USPATFULL on STN  
TI Nanoporous silicon-based electrochemical nucleic acid biosensor

L3 ANSWER 7 OF 19 MEDLINE on STN DUPLICATE 2  
TI Exploiting Sub-threshold and above-threshold characteristics in a silver-enhanced gold nanoparticle based biochip.

L3 ANSWER 8 OF 19 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 3  
TI Aptasensors for detection of microbial and viral pathogens

L3 ANSWER 9 OF 19 COMPENDEX COPYRIGHT 2010 EEI on STN  
TI Design and characterization of a silver-enhanced gold nanoparticle-based biochip

L3 ANSWER 10 OF 19 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 4  
TI Electrically active polyaniline coated magnetic (EAPM) nanoparticle as novel transducer in biosensor for detection of Bacillus anthracis spores in food samples

L3 ANSWER 11 OF 19 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 5  
TI Fluorescent bio-barcode DNA assay for the detection of Salmonella enterica serovar Enteritidis

L3 ANSWER 12 OF 19 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 6  
TI Performance enhancement of polyaniline-based polymeric wire biosensor

L3 ANSWER 13 OF 19 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN  
TI Pandemic Influenza Detection by Surface Plasmon Resonance and Electrically Active Magnetic Nanoparticles.

L3 ANSWER 14 OF 19 CAPLUS COPYRIGHT 2010 ACS on STN  
TI Nanoparticle-based biosensors for biodefense and food safety

L3 ANSWER 15 OF 19 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 7  
TI Electrically-active ferromagnetic nanoparticle conductimetric biosensor test kit with immunomagnetic capture

L3 ANSWER 16 OF 19 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 8  
 TI Electrically active magnetic nanoparticles for concentrating and  
 detecting Bacillus anthracis spores in a direct-charge transfer biosensor

L3 ANSWER 17 OF 19 USPATFULL on STN  
 TI Synthesis of conducto-magnetic polymers as nano-transducers in biosensor  
 design

L3 ANSWER 18 OF 19 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 9  
 TI Synthesis of a nano electro-magnetic polymer and its application in a DCT  
 biosensor

L3 ANSWER 19 OF 19 USPATFULL on STN  
 TI DNA-polypyrrole based biosensors for rapid detection of microorganisms

=> d l3 1, 4, 5, 10, 13-18 ibib abs

L3 ANSWER 1 OF 19 CAPLUS COPYRIGHT 2010 ACS on STN  
 ACCESSION NUMBER: 2010:614711 CAPLUS <<LOGINID::20100717>>  
 TITLE: Characterization of polyaniline-coated magnetic  
 nanoparticles for application in a disposable  
 membrane strip biosensor  
 AUTHOR(S): Yuk, J. S.; Rose, J.; Alocilja, E. C.  
 CORPORATE SOURCE: Department of Biosystems and Agricultural Engineering,  
 East Lansing, MI, 48824, USA  
 SOURCE: European Physical Journal: Applied Physics (2010),  
 50(1), 11401/p1-11401/p5  
 CODEN: EPAPFV; ISSN: 1286-0042  
 PUBLISHER: EDP Sciences  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English

AB We investigated the elec. properties of polyaniline-coated magnetic  
 nanoparticles as a signal transducer for application in a  
 disposable membrane strip biosensor. The size of these particles  
 (.apprx.100 nm) was investigated by a transmission electron microscope.  
 Elec. properties of these nanoparticles were investigated by  
 four-point probe measurements and I-V measurements. Polyaniline-coated  
 magnetic nanoparticles had a resistivity of 0.385  $\Omega$  cm and  
 showed ohmic behavior. Resistance decreased with increasing concentration of  
 polyaniline. We also demonstrated that the resistance decreased with  
 increasing concentration of biotinylated IgG conjugated with these  
 nanoparticles.

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 19 USPATFULL on STN  
 ACCESSION NUMBER: 2009:174140 USPATFULL <<LOGINID::20100717>>  
 TITLE: Synthesis of conducto-magnetic polymers as  
 nano-transducers in biosensor design  
 INVENTOR(S): Alocilja, Evangelyn C., East Lansing, MI,  
 UNITED STATES  
 Zhou, John C., Northville, MI, UNITED STATES  
 PATENT ASSIGNEE(S): Board of Trustees of MICHIGAN STATE UNIVERSITY, East  
 Lansing, MI, UNITED STATES (U.S. corporation)

|                       | NUMBER   | KIND | DATE          |
|-----------------------|--|------|---------------|
| PATENT INFORMATION:   | US 20090156756                                       | A1   | 20090618      |
| APPLICATION INFO.:    | US 2008-313383                                       | A1   | 20081120 (12) |
| RELATED APPLN. INFO.: | Division of Ser. No. US 2006-525425, filed on 22 Sep |      |               |

2006, Pat. No. US 7468150

|                       | NUMBER  | DATE          |
|-----------------------|---|---------------|
|                       | -----   | -----         |
| PRIORITY INFORMATION: | US 2005-720601P   | 20050926 (60) |
| DOCUMENT TYPE:        | Utility   |               |
| FILE SEGMENT:         | APPLICATION   |               |
| LEGAL REPRESENTATIVE: | Ian C. McLeod, Ian C. McLeod, P.C., 2190 Commons Parkway, Okemos, MI, 48864, US |               |
| NUMBER OF CLAIMS:     | 5   |               |
| EXEMPLARY CLAIM:      | 1   |               |
| NUMBER OF DRAWINGS:   | 3 Drawing Page(s)   |               |
| LINE COUNT:           | 612   |               |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A conductive polymer of polyaniline (PANI), tetracyanoquinodimethane (TCNQ) and a transferrin family member. The conductive polymer can be used in conductometric assays, including biosensor devices. One particular transferrin family member provided in the polymer is lactoferrin.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 5 OF 19 USPATFULL on STN

ACCESSION NUMBER: 2009:137593 USPATFULL <<LOGINID::20100717>>  
TITLE: Biologically enhanced electrically-active magnetic nanoparticles for concentration, separation, and detection applications  
INVENTOR(S): Alocilja, Evangelyn C., East Lansing, MI, UNITED STATES  
Pal, Sudeshna, Okemos, MI, UNITED STATES  
Setterington, Emma B., DeWitt, MI, UNITED STATES  
PATENT ASSIGNEE(S): Board of Trustees of Michigan State University, East Lansing, MI, UNITED STATES (U.S. corporation)

|                     | NUMBER         | KIND  | DATE          |
|---------------------|----------------|-------|---------------|
|                     | -----          | ----- | -----         |
| PATENT INFORMATION: | US 20090123939 | A1    | 20090514      |
| APPLICATION INFO.:  | US 2008-214325 | A1    | 20080618 (12) |

|                       | NUMBER  | DATE          |
|-----------------------|---|---------------|
|                       | -----   | -----         |
| PRIORITY INFORMATION: | US 2007-936424P   | 20070620 (60) |
| DOCUMENT TYPE:        | Utility   |               |
| FILE SEGMENT:         | APPLICATION   |               |
| LEGAL REPRESENTATIVE: | Ian C. McLeod, IAN C. McLEOD, P.C., 2190 Commons Parkway, Okemos, MI, 48864, US |               |
| NUMBER OF CLAIMS:     | 25  |               |
| EXEMPLARY CLAIM:      | 1   |               |
| NUMBER OF DRAWINGS:   | 5 Drawing Page(s)   |               |
| LINE COUNT:           | 1031  |               |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The disclosure generally relates to a particulate composition formed from a conductive polymer (e.g., conductive polyanilines, polypyrroles, polythiophenes) bound to magnetic nanoparticles (e.g., Fe(II)- and/or Fe(III)-based magnetic metal oxides). The particulate composition can be formed into a biologically enhanced, electrically active magnetic (BEAM) nanoparticle composition by further including a binding pair member (e.g., an antibody) bound to the conductive polymer of the particulate composition. Methods and kits employing the particulate composition and the BEAM nanoparticle composition also are disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 10 OF 19 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 4

ACCESSION NUMBER: 2009:44414 CAPLUS <<LOGINID::20100717>>  
DOCUMENT NUMBER: 150:372970  
TITLE: Electrically active polyaniline coated magnetic (EAPM) nanoparticle as novel transducer in biosensor for detection of Bacillus anthracis spores in food samples  
AUTHOR(S): Pal, Sudeshna; Alocilja, Evangelyn C.  
CORPORATE SOURCE: Department of Biosystems and Agricultural Engineering, Michigan State University, East Lansing, MI, 48824, USA  
SOURCE: Biosensors & Bioelectronics (2009), 24(5), 1437-1444  
CODEN: BBIOE4; ISSN: 0956-5663  
PUBLISHER: Elsevier B.V.  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB Elec. active polyaniline coated magnetic (EAPM) nanoparticle -based biosensor has been developed for the detection of Bacillus anthracis endospores in contaminated food samples. The 100 nm-diameter EAPM nanoparticles are synthesized from aniline monomer (made elec. active by acid doping) coating the surface of gamma iron oxide cores. The magnetic, elec., and structural characteristics of the synthesized EAPM nanoparticles have been studied using superconducting quantum interference device (SQUID), four-point probe, and transmission electron microscopy (TEM). Room temperature hysteresis of the synthesized nanoparticles shows a saturation magnetization value of 44.1 emu/g. The EAPM nanoparticles are biol. modified to act as an immunomagnetic concentrator of B. anthracis spores from lettuce, ground beef and whole milk samples and are directly applied to a direct-charge transfer biosensor. The detection mechanism of the biosensor depends on the capillary flow of the captured spores on the biosensor surface along with direct-charge transfer across the EAPM nanoparticles. Exptl. results indicate that the biosensor is able to detect B. anthracis spores at concns. as low as  $4.2 \times 10^2$  spores/mL from the samples. The EAPM-based biosensor detection system is fast and reliable with a total detection time of 16 min.

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)  
REFERENCE COUNT: 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 13 OF 19 BIOSIS COPYRIGHT (c) 2010 The Thomson Corporation on STN

ACCESSION NUMBER: 2010:10794 BIOSIS <<LOGINID::20100717>>  
DOCUMENT NUMBER: PREV201000010794  
TITLE: Pandemic Influenza Detection by Surface Plasmon Resonance and Electrically Active Magnetic Nanoparticles.  
AUTHOR(S): Kamikawa, Tracy [Reprint Author]; Mikolajczyk, Malgorzata; Kennedy, Michael; Zhong, Lilin; Zhang, Pei; Scott, Dorothy; Alocilja, Evangelyn  
CORPORATE SOURCE: Michigan State Univ, FDA CBER, Centreville, VA USA  
SOURCE: Glycobiology, (NOV 2009) Vol. 19, No. 11, pp. 1302-1303. Meeting Info.: Annual Meeting of the Society-for-Glycobiology. San Diego, CA, USA. November 12-15, 2009. Soc\* Glycobiol. ISSN: 0959-6658.  
DOCUMENT TYPE: Conference; (Meeting)  
Conference; Abstract; (Meeting Abstract)

LANGUAGE: English  
ENTRY DATE: Entered STN: 16 Dec 2009  
Last Updated on STN: 16 Dec 2009

L3 ANSWER 14 OF 19 CAPLUS COPYRIGHT 2010 ACS on STN  
ACCESSION NUMBER: 2009:300763 CAPLUS <<LOGINID::20100717>>  
TITLE: Nanoparticle-based biosensors for biodefense  
and food safety  
AUTHOR(S): Alocilja, Evangelyn C.  
CORPORATE SOURCE: Biosystems and Agricultural Engineering, Michigan  
State University, East Lansing, MI, 48824-1323, USA  
SOURCE: Abstracts of Papers, 237th ACS National Meeting, Salt  
Lake City, UT, United States, March 22-26, 2009 (2009)  
, AGFD-121. American Chemical Society: Washington, D.  
C.  
CODEN: 69LNK5  
DOCUMENT TYPE: Conference; Meeting Abstract; (computer optical disk)  
LANGUAGE: English

AB The US food and fiber system (FFS) is crucial to the viability of the US economy, a basic foundation of public health, a vital component of homeland security, and impacts political and global systems. The total FFS contributed over \$1.24 trillion to the US gross domestic product in 2001. Thus, any significant alteration and perceived threat to FFS has the potential to seriously disrupt the nation's economy and could severely impact human health and activities. Furthermore, the food supply chain is a global network, with food sources and food products crossing national borders every day. Its complex distribution system provides numerous entry points and routes in which contaminants (deliberate or accidental) can be introduced into the system. Thus, an aggressive and responsive surveillance is required to protect the food system, prevent consumer illness, and respond quickly to unintended events. Conventional methods to detect microbial pathogenic contaminants take days or weeks for confirmation. In a world of bioterrorism, food safety concerns, and exotic diseases, these methods are no longer sufficient for containment. One of the emerging and novel detection technologies for microbial diagnosis is the biosensor. A biosensor is an electronic device that contains a biol. receptor in close proximity to a transducer which converts the interaction between the target and the receptor into an electronic signal. Furthermore, the emergence of nanotechnol. has introduced new and innovative nanoparticle-based transducers, enhancing the performance capabilities of biosensor devices. In this presentation, nanoparticle-based biosensors will be shown, including design, fabrication, and applications. Particularly, nano-structured immuno-sensors and DNA sensors will be illustrated. Among the microbial targets are Bacillus anthracis, E. coli O157:H7, and Salmonella species. Performance capabilities will be discussed, including biosensor sensitivity, specificity, speed of detection, ease of use, and field-portability.

L3 ANSWER 15 OF 19 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 7  
ACCESSION NUMBER: 2008:1534079 CAPLUS <<LOGINID::20100717>>  
DOCUMENT NUMBER: 150:73434  
TITLE: Electrically-active ferromagnetic nanoparticle  
conductimetric biosensor test kit with immunomagnetic  
capture  
INVENTOR(S): Alocilja, Evangelyn C.; Pal, Sudeshna;  
Setterington, Emma B.  
PATENT ASSIGNEE(S): Board of Trustees of Michigan State University, USA  
SOURCE: U.S. Pat. Appl. Publ., 24pp.  
CODEN: USXXCO  
DOCUMENT TYPE: Patent

LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE       |
|------------------------|------|----------|-----------------|------------|
| -----                  | ---- | -----    | -----           | -----      |
| US 20080314766         | A1   | 20081225 | US 2008-214362  | 20080618   |
| US 20090123939         | A1   | 20090514 | US 2008-214325  | 20080618   |
| PRIORITY APPLN. INFO.: |      |          | US 2007-936424P | P 20070620 |

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB A membrane strip biosensor device using a fluid mobile conductive composition of ferromagnetic nanoparticles bound to a conductive polymer bound to a capture reagent is described. In particular immobilized antibodies are used as the capture reagent. The biosensor device is designed to detect analytes at low concns. in near real-time with an electronic data collection system and can be small. The device can be used to detect pathogens, proteins, and other biol. materials of interest in food, water, and environmental samples. The device can also be used for on-site diagnosis and against potential bioterrorism. In particular, the device was used for detection of Bacillus anthracis spores. Potential users include food processing plants, meat packaging facilities, fruit and vegetable packers, restaurants, food and water safety inspectors, food wholesalers and retailers, farms, homes, medical profession, import border crossing personnel, and the police force, military, space habitation and national security.

L3 ANSWER 16 OF 19 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 8

ACCESSION NUMBER: 2008:780243 CAPLUS <<LOGINID::20100717>>

DOCUMENT NUMBER: 149:345950

TITLE: Electrically active magnetic nanoparticles for concentrating and detecting Bacillus anthracis spores in a direct-charge transfer biosensor

AUTHOR(S): Pal, Sudeshna; Settrington, Emma B.; Alocilja, Evangelyn C.

CORPORATE SOURCE: Department of Biosystems and Agricultural Engineering, Michigan State University, East Lansing, MI, 48824, USA

SOURCE: IEEE Sensors Journal (2008), 8(6), 647-654

CODEN: ISJEAZ; ISSN: 1530-437X

PUBLISHER: Institute of Electrical and Electronics Engineers

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Bacillus anthracis, the causative agent of anthrax, is considered as one of the most important pathogens in the list of bioterrorism threats. This paper describes the synthesis of elec. active magnetic (EAM) nanoparticles and their application in a direct-charge transfer biosensor for detecting B. anthracis Sterne endospores. These EAM nanoparticles were synthesized from aniline monomer made elec. active by acid doping and gamma iron (III) oxide ( $\gamma$  - Fe<sub>2</sub>O<sub>3</sub>) nanoparticles resulting in nanomaterials with diams. ranging from 50 to 200 nm. Room temperature hysteresis measurements of the synthesized nanomaterials using a Quantum Design MPMS SQUID magnetometer showed that their saturation magnetization values were between 61.1 and 33.5 emu/gm. The structural morphol. of the nanomaterial was studied using transmission electron microscopy and the electronic diffraction patterns were observed to determine their crystalline nature. The EAM nanoparticles were coated with antibodies specific to B. anthracis Sterne endospores and used to capture the target antigen from varying spore concns. (101 to 107 spores/mL) by applying a magnetic field. The immunomagnetically captured spores were then applied to a direct-charge transfer biosensor having a dimension of 5 mm + 60 mm. The detection of the spores was based on

the capillary flow of the captured spores aided by a direct-charge transfer of the EAM nanoparticle. The elec. signal generated was recorded for 6 min in a reagentless process. The biosensor was able to detect the presence of B. anthracis spores at a concentration of  $4.2 \times 10^2$  spores/mL. Specificity studies were also carried out to determine the biosensor responses in the presence of nontarget antigens. This study shows the novel application of EAM nanoparticles both as an immunomagnetic concentrator and a transducer in a portable, easy to use, biosensor that has the potential to be used as a rapid detection device for defense and biosecurity.

OS.CITING REF COUNT: 3 THERE ARE 3 CAPLUS RECORDS THAT CITE THIS RECORD (3 CITINGS)  
 REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 17 OF 19 USPATFULL on STN

ACCESSION NUMBER: 2007:79725 USPATFULL <<LOGINID::20100717>>

TITLE: Synthesis of conducto-magnetic polymers as nano-transducers in biosensor design

INVENTOR(S): Alocilja, Evangelyn C., East Lansing, MI, UNITED STATES

Zhou, John C., Northville, MI, UNITED STATES

PATENT ASSIGNEE(S): Board of Trustees of Michigan State University, East Lansing, MI, UNITED STATES (U.S. corporation)

|                     | NUMBER         | KIND | DATE          |
|---------------------|----------------|------|---------------|
| PATENT INFORMATION: | US 20070069186 | A1   | 20070329      |
|                     | US 7468150     | B2   | 20081223      |
| APPLICATION INFO.:  | US 2006-525425 | A1   | 20060922 (11) |

|                       | NUMBER  | DATE          |
|-----------------------|---|---------------|
| PRIORITY INFORMATION: | US 2005-720601P   | 20050926 (60) |
| DOCUMENT TYPE:        | Utility   |               |
| FILE SEGMENT:         | APPLICATION   |               |
| LEGAL REPRESENTATIVE: | Ian C. McLeod, Ian C. McLeod, P.C., 2190 Commons Parkway, Okemos, MI, 48864, US |               |
| NUMBER OF CLAIMS:     | 12  |               |
| EXEMPLARY CLAIM:      | 1   |               |
| NUMBER OF DRAWINGS:   | 3 Drawing Page(s)   |               |
| LINE COUNT:           | 643   |               |

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB A conductive polymer of polyaniline (PANI), tetracyanoquinodimethane (TCNQ) and a transferrin family member. The conductive polymer can be used in conductometric assays, including biosensor devices. One particular transferrin family member provided in the polymer is lactoferrin.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L3 ANSWER 18 OF 19 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 9

ACCESSION NUMBER: 2009:120193 CAPLUS <<LOGINID::20100717>>

DOCUMENT NUMBER: 151:3088

TITLE: Synthesis of a nano electro-magnetic polymer and its application in a DCT biosensor

AUTHOR(S): Pal, Sudeshna; Hummel, Emma B.; Alocilja, Evangelyn C.

CORPORATE SOURCE: Biosystems and Agricultural Engineering, Michigan State University, East Lansing, MI, USA

SOURCE: NSTI Nanotech 2007, Nanotechnology Conference and



Trade Show, Santa Clara, CA, United States, May 20-24, 2007 (2007), Volume 2, 485-488. Editor(s): Laudon, Matthew; Romanowicz, Bart. CRC Press: Boca Raton, Fla.

CODEN: 69LJAH; ISBN: 1-4200-6342-1

DOCUMENT TYPE: Conference

LANGUAGE: English

AB A nano electro-magnetic conductive polyaniline was synthesized for application in a direct-charge transfer biosensor for the detection of Bacillus species. The polymer was synthesized in the presence of-Fe2O3 nanoparticles with a monomer to-Fe2O3 nanoparticle ratio of 1:0.4 and had diameter between 50 and 200 nm. The room temperature

hysteresis

measurements showed that the magnetic polymer had a saturation magnetization value of 43.0 emu/g and approached super paramagnetic behavior. The synthesized nanomagnetic polyaniline was coated with anti Bacillus cereus antibodies and used for separation of the target antigens by applying a magnetic field which was followed by its application into a direct charge transfer (DCT) biosensor. The detection was based on the capillary flow of the nanomagnetic polymer-antigen conjugates which enabled a direct charge transfer in the capture membrane region of the biosensor. Signal generation and data recording was completed in 6 min in a reagentless process. The sensitivity of detection of the biosensor was found to be 101 CFU/mL. This easy to use, portable reagentless biosensor has the potential to serve as a rapid detection tool for countering bioterrorism agents.

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> e pal sudeshnaa/u

'U' IS NOT A VALID EXPAND FIELD CODE FOR FILE 'CAPLUS'  
'U' IS NOT A VALID EXPAND FIELD CODE FOR FILE 'MEDLINE'  
'U' IS NOT A VALID EXPAND FIELD CODE FOR FILE 'BIOSIS'  
'U' IS NOT A VALID EXPAND FIELD CODE FOR FILE 'CERAB'  
'U' IS NOT A VALID EXPAND FIELD CODE FOR FILE 'USPATFULL'  
'U' IS NOT A VALID EXPAND FIELD CODE FOR FILE 'ANABSTR'  
'U' IS NOT A VALID EXPAND FIELD CODE FOR FILE 'BIOTECHNO'  
'U' IS NOT A VALID EXPAND FIELD CODE FOR FILE 'METADEX'  
'U' IS NOT A VALID EXPAND FIELD CODE FOR FILE 'COMPENDEX'

The indicated field code is not available for EXPAND in this file. To see a list of valid EXPAND field codes, enter HELP SFIELDS at an arrow prompt (=>).

=> e pal sudeshna/au

|     |        |                           |
|-----|--------|---------------------------|
| E1  | 2      | PAL SUDEBKUMAR P/AU       |
| E2  | 7      | PAL SUDEBKUMAR PRASANT/AU |
| E3  | 26 --> | PAL SUDESHNA/AU           |
| E4  | 1      | PAL SUDHA K/AU            |
| E5  | 5      | PAL SUDHANSU S/AU         |
| E6  | 3      | PAL SUDHIR/AU             |
| E7  | 10     | PAL SUDHIR C/AU           |
| E8  | 4      | PAL SUDHIR CHANDRA/AU     |
| E9  | 1      | PAL SUDIP/AU              |
| E10 | 1      | PAL SUDIP K/AU            |
| E11 | 2      | PAL SUDIPENDRA NATH/AU    |
| E12 | 60     | PAL SUDIPTA/AU            |

=> s e3 and polymer

L4 7 "PAL SUDESHNA"/AU AND POLYMER

=> dup rem l4  
PROCESSING COMPLETED FOR L4  
L5 5 DUP REM L4 (2 DUPLICATES REMOVED)

=> d l5 1-5 ti

L5 ANSWER 1 OF 5 USPATFULL on STN  
TI Biologically enhanced electrically-active magnetic nanoparticles for concentration, separation, and detection applications

L5 ANSWER 2 OF 5 COMPENDEX COPYRIGHT 2010 EEI on STN  
TI Electrically active polyaniline coated magnetic (EAPM) nanoparticle as novel transducer in biosensor for detection of Bacillus anthracis spores in food samples

L5 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 1  
TI Electrically-active ferromagnetic nanoparticle conductimetric biosensor test kit with immunomagnetic capture

L5 ANSWER 4 OF 5 COMPENDEX COPYRIGHT 2010 EEI on STN  
TI Sensitivity and specificity performance of a direct-charge transfer biosensor for detecting Bacillus cereus in selected food matrices

L5 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2010 ACS on STN DUPLICATE 2  
TI Synthesis of a nano electro-magnetic polymer and its application in a DCT biosensor

=> e settington emma/au

E1 3 SETTERHOLM VANCE/AU  
E2 10 SETTERHOLM VANCE C/AU  
E3 0 --> SETTERINGTON EMMA/AU  
E4 5 SETTERINGTON EMMA B/AU  
E5 1 SETTERINGTON FRED/AU  
E6 1 SETTERINGTON JOHN T/AU  
E7 1 SETTERINGTON M J/AU  
E8 2 SETTERINGTON MICHAEL A/AU  
E9 1 SETTERINGTON R/AU  
E10 1 SETTERINGTON R G/AU  
E11 1 SETTERL MAX/AU  
E12 3 SETTERLIND A/AU

=> s e4 and particle

L6 4 "SETTERINGTON EMMA B"/AU AND PARTICLE

=> d l6 1-4 ti

L6 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2010 ACS on STN  
TI Electrically-active ferromagnetic nanoparticle conductimetric biosensor test kit with immunomagnetic capture

L6 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2010 ACS on STN  
TI Electrically active magnetic nanoparticles for concentrating and detecting Bacillus anthracis spores in a direct-charge transfer biosensor

L6 ANSWER 3 OF 4 USPATFULL on STN  
TI Biologically enhanced electrically-active magnetic nanoparticles for concentration, separation, and detection applications

L6 ANSWER 4 OF 4 USPATFULL on STN  
TI Electrically-active ferromagnetic particle conductimetric

biosensor test kit

=> logoff y

(FILE 'HOME' ENTERED AT 13:09:40 ON 17 JUL 2010)

FILE 'CAPLUS, MEDLINE, BIOSIS, BIOTECHNO, COMPENDEX, ANABSTR, CERAB, METADEX, USPATFULL' ENTERED AT 13:09:55 ON 17 JUL 2010

E ALOCILJA EVANGELYN/AU

L1 154 SEA FILE=MFE SPE=ON ABB=ON PLU=ON ("ALOCILJA E C"/AU OR  
"ALOCILJA EVANGELYN"/AU OR "ALOCILJA EVANGELYN C"/AU)

L2 38 SEA FILE=MFE SPE=ON ABB=ON PLU=ON L1 AND NANOPARTICLE

L3 19 DUP REM L2 (19 DUPLICATES REMOVED)

D L3 1-19 TI

D L3 1, 4, 5, 10, 13-18 IBIB ABS

E PAL SUDESHNA/AU

L4 7 SEA FILE=MFE SPE=ON ABB=ON PLU=ON "PAL SUDESHNA"/AU AND  
POLYMER

L5 5 DUP REM L4 (2 DUPLICATES REMOVED)

D L5 1-5 TI

E SETTERINGTON EMMA/AU

L6 4 SEA FILE=MFE SPE=ON ABB=ON PLU=ON "SETTERINGTON EMMA B"/AU  
AND PARTICLE

D L6 1-4 TI

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

65.75

65.97

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

-5.10

-5.10

STN INTERNATIONAL LOGOFF AT 13:16:36 ON 17 JUL 2010